Fig.1.

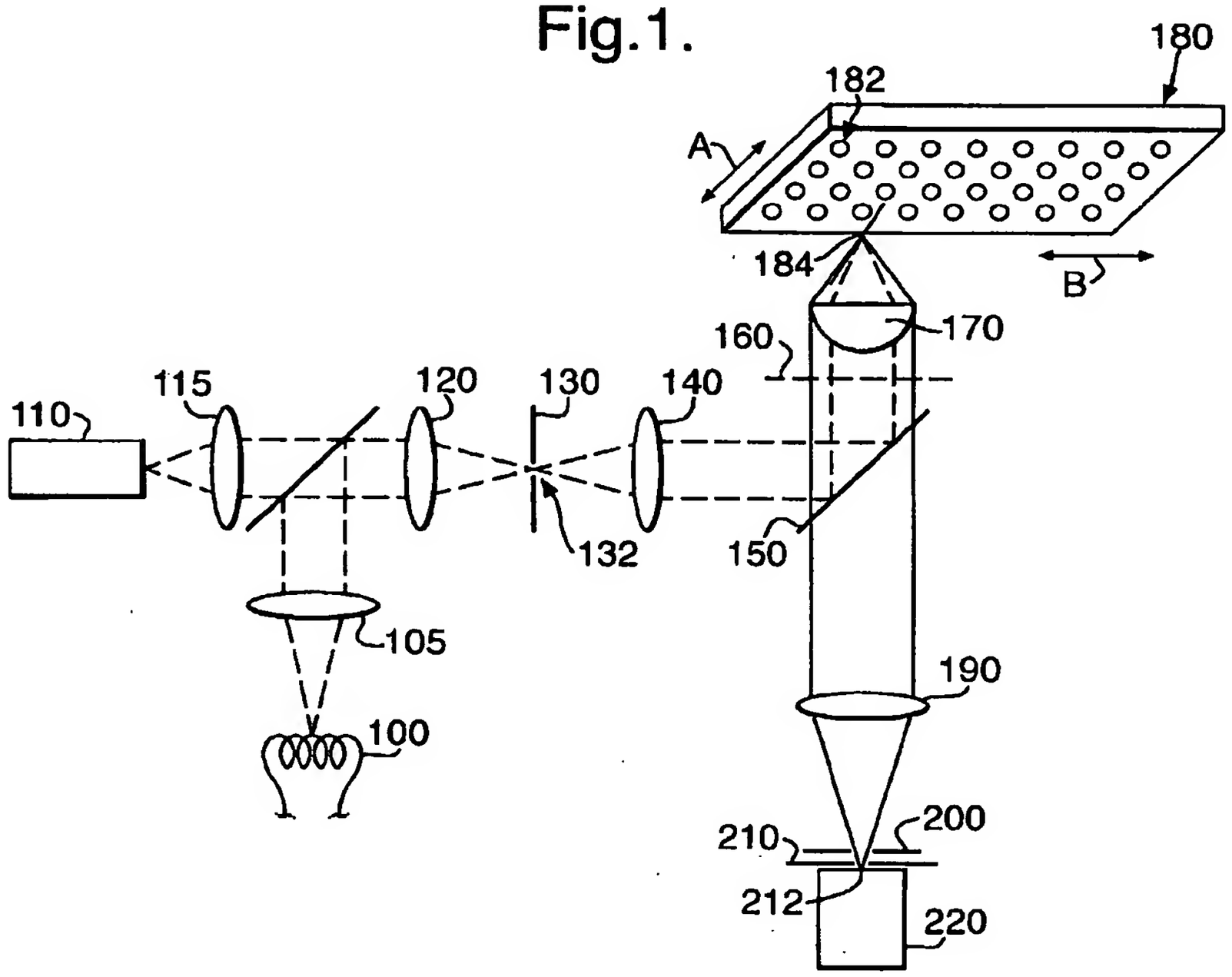

180
182
A
184
B
160
170
110
115
120
130
140
132
150
105
100
190
210
200
212
220

Fig.2a.

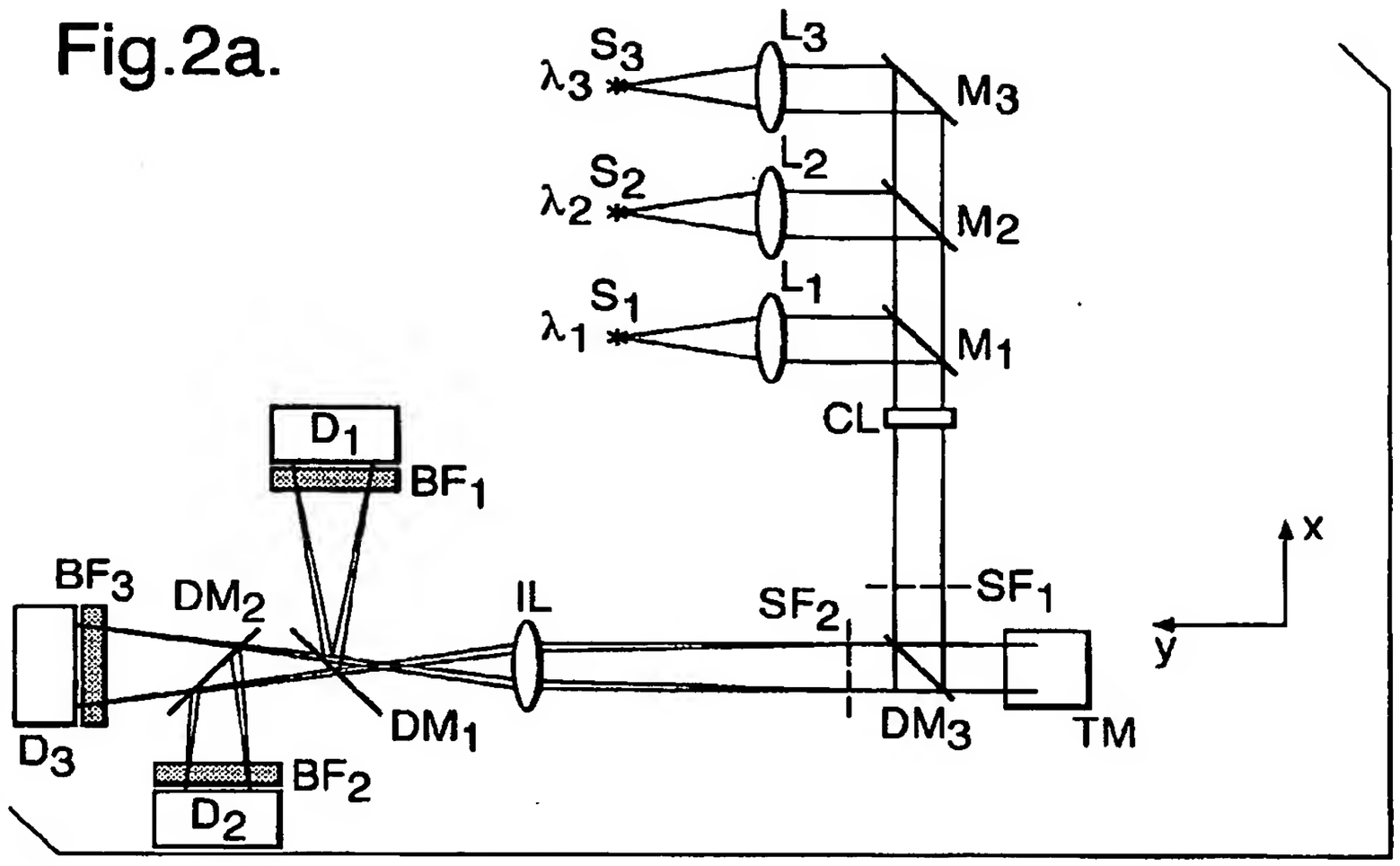


Fig.2b.

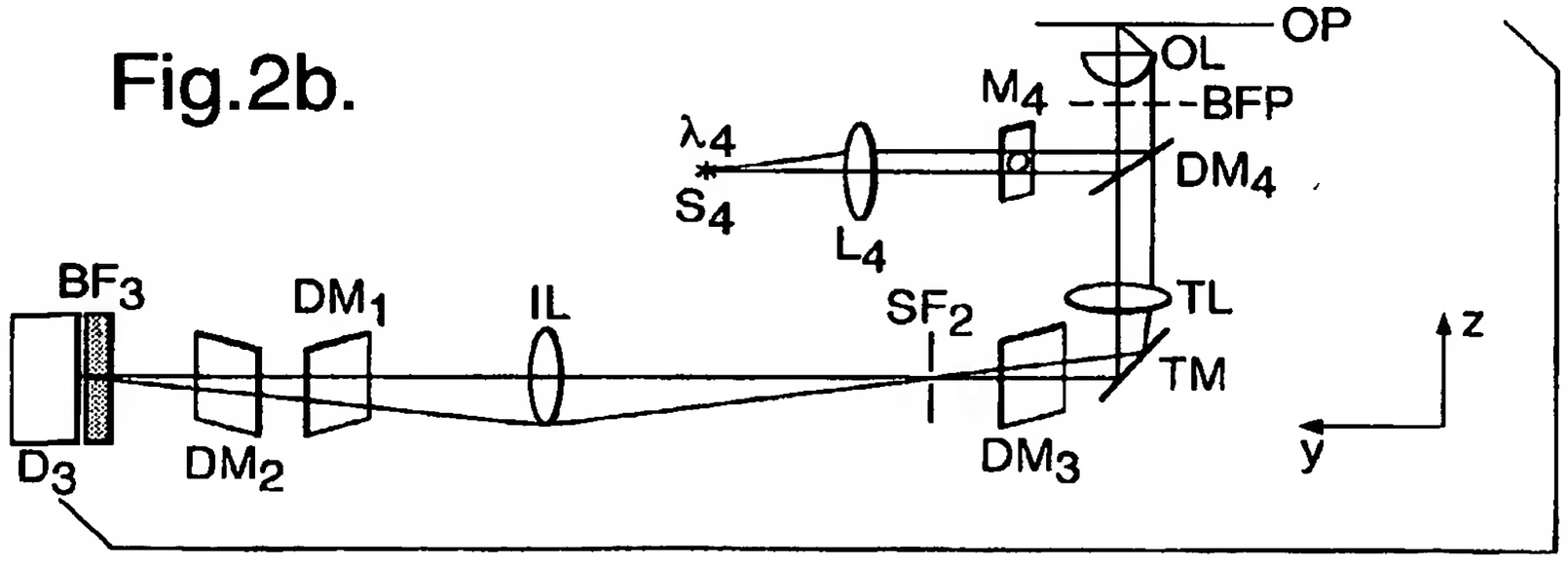


Fig.2c.

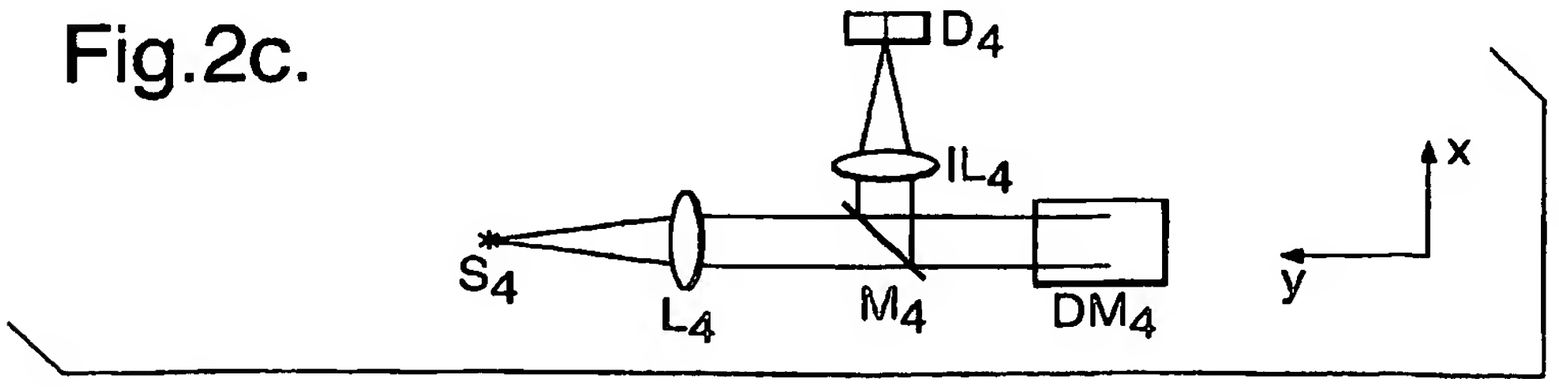


Fig.3a.

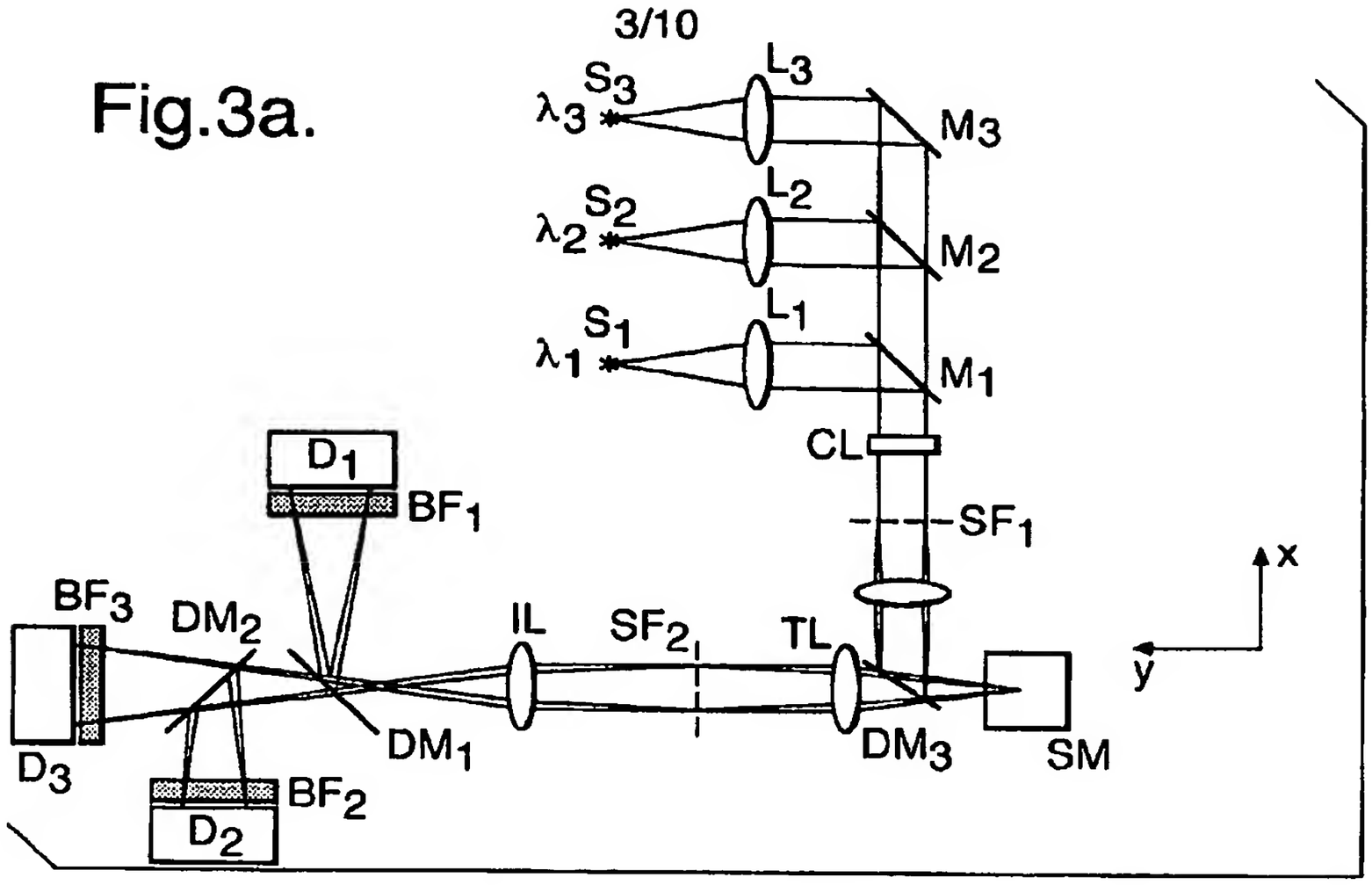


Fig.3b.

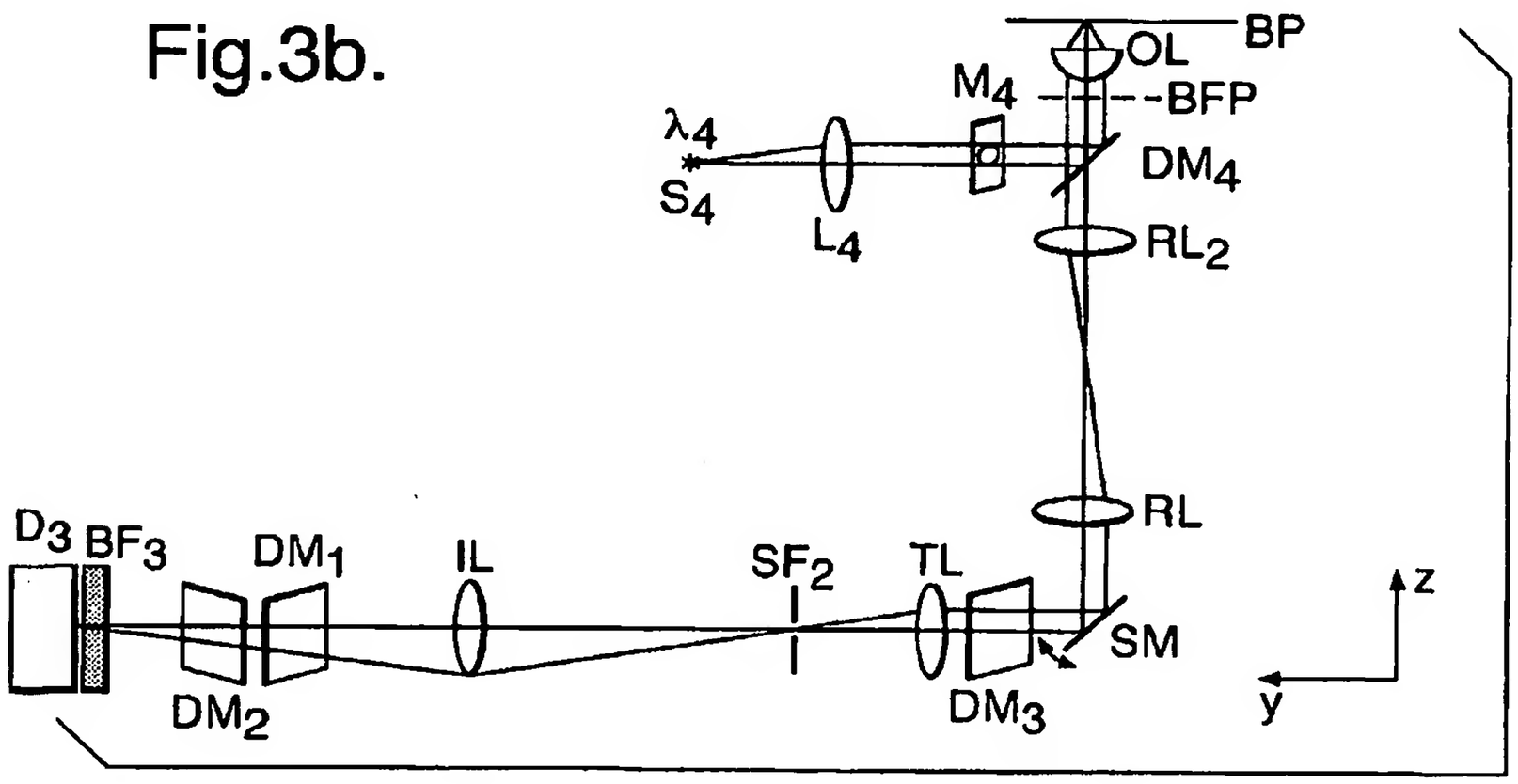
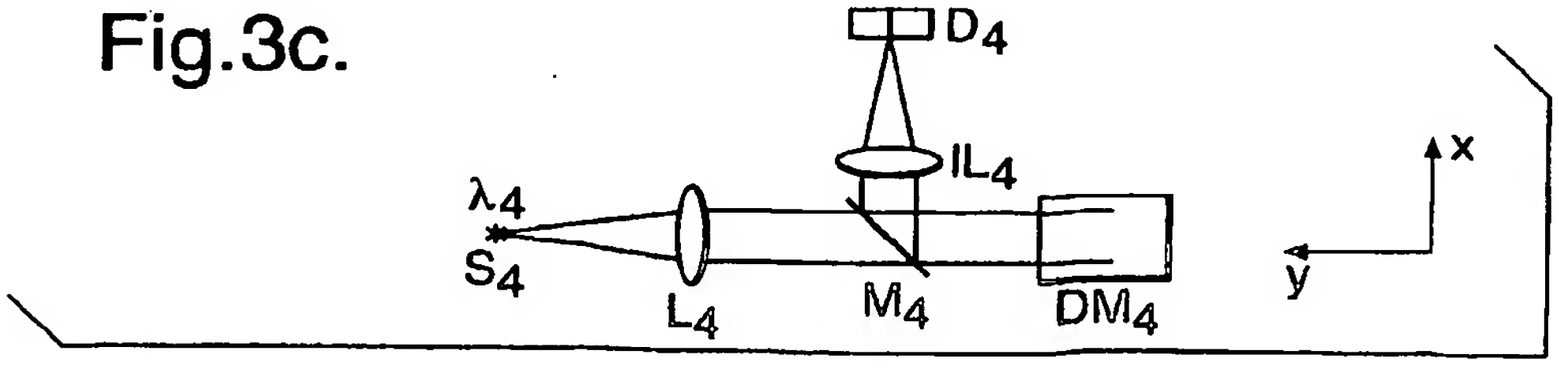


Fig.3c.



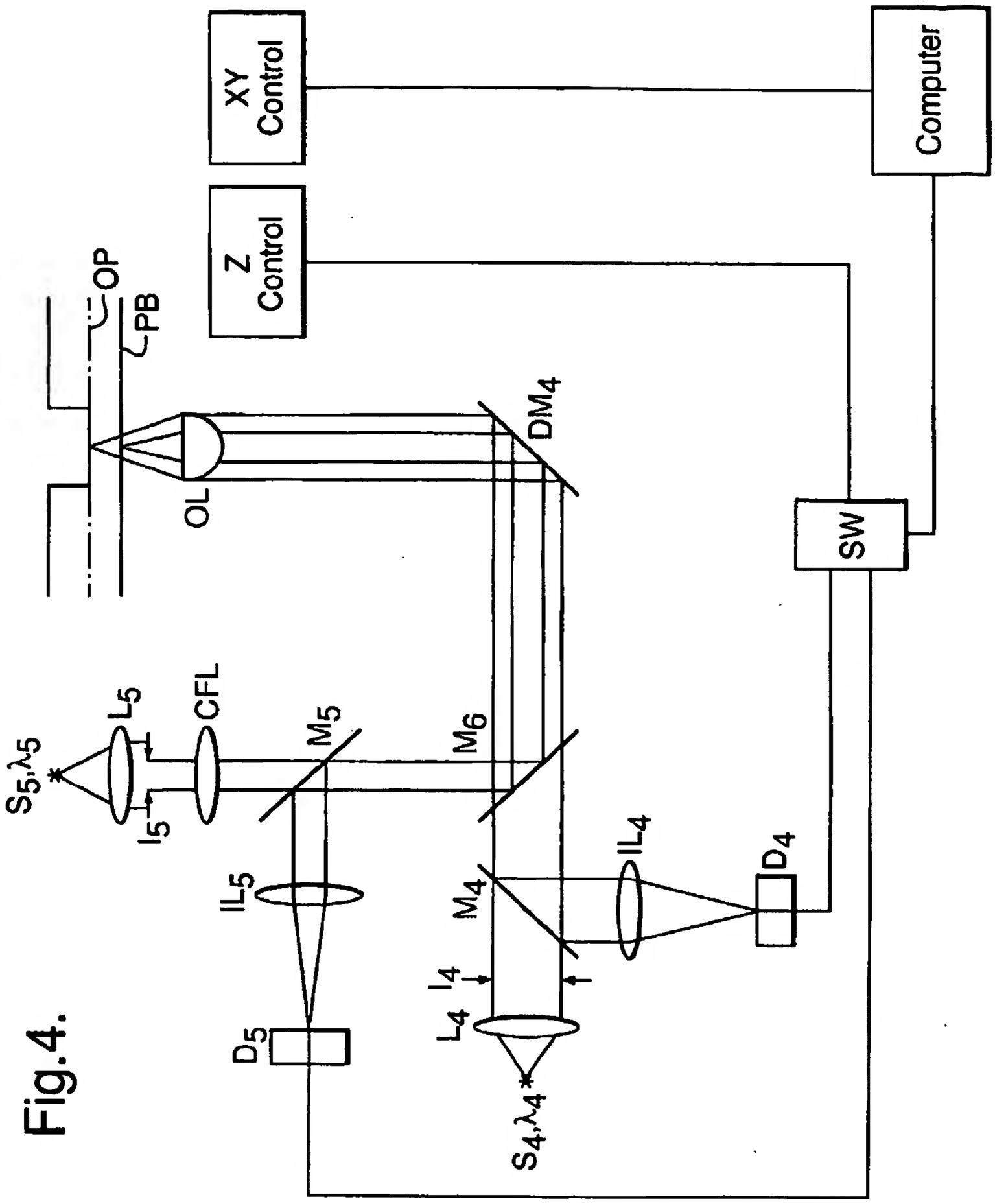

XY Control
Z Control
Computer
SW
OP
PB
OL
DM4
M6
M5
CFL
L5
S5,λ5
I5
IL5
D5
M4
IL4
D4
I4
L4
S4,λ4*

Fig.4.

Fig.5a.

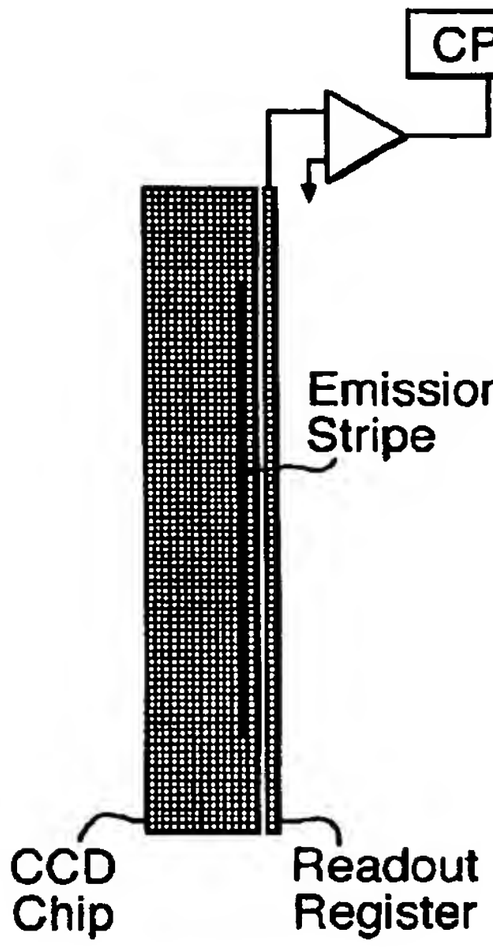


Fig.5b.

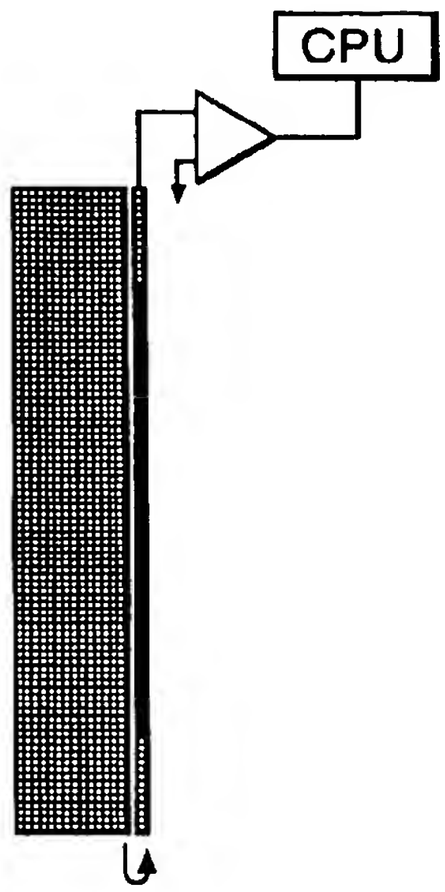
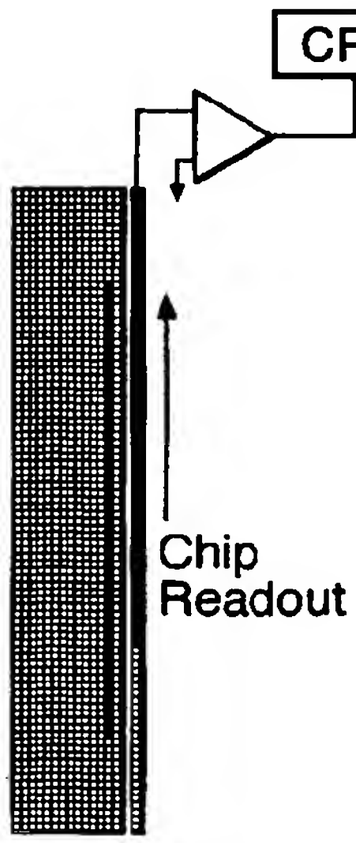


Fig.5c.



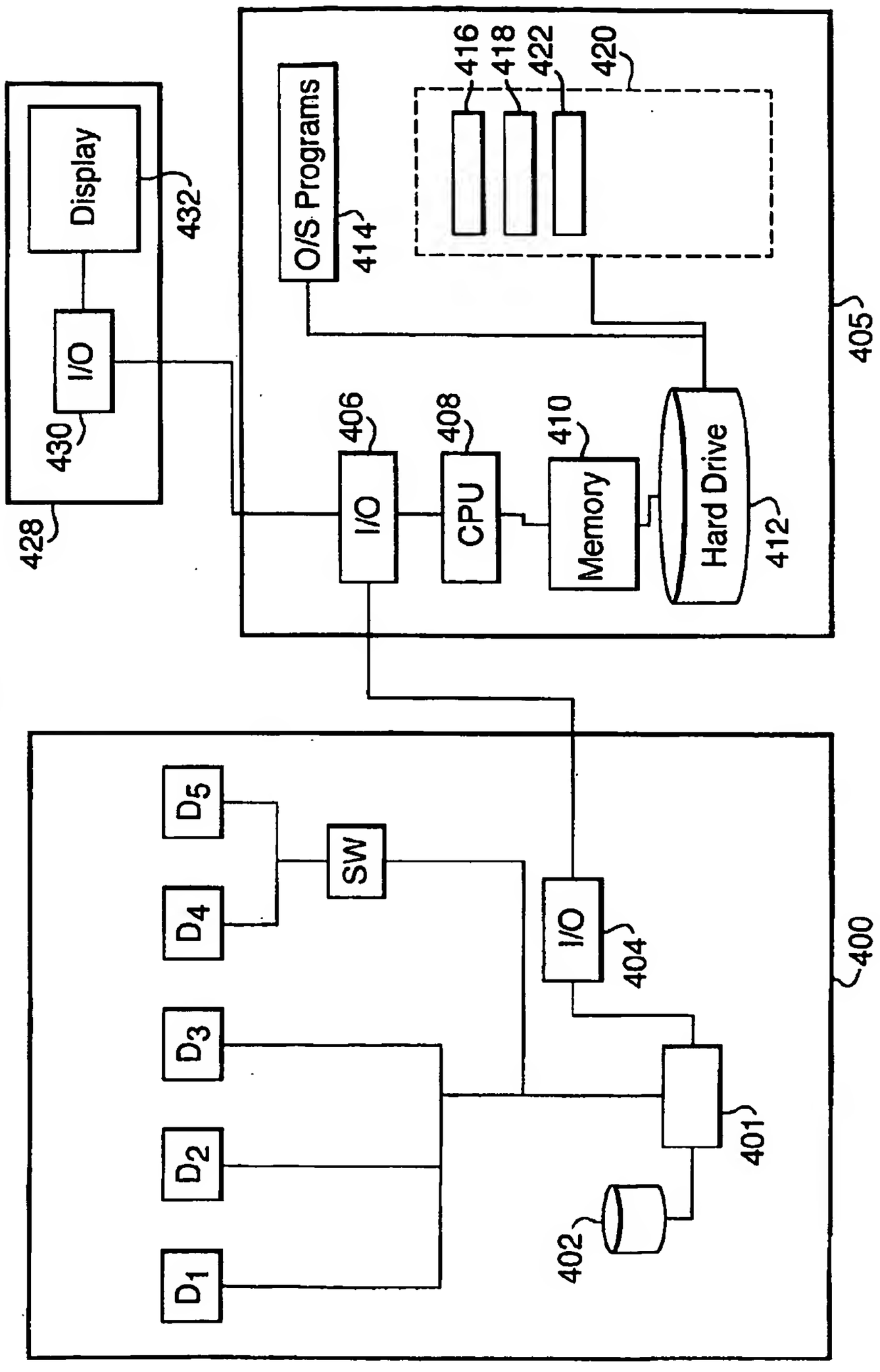

Display
432
I/O
430
428
O/S Programs
414
416
418
422
420
405
406
I/O
408
CPU
410
Memory
Hard Drive
412
400
D5
D4
D3
D2
D1
SW
I/O
404
401
402

Fig.6.

Fig.7.

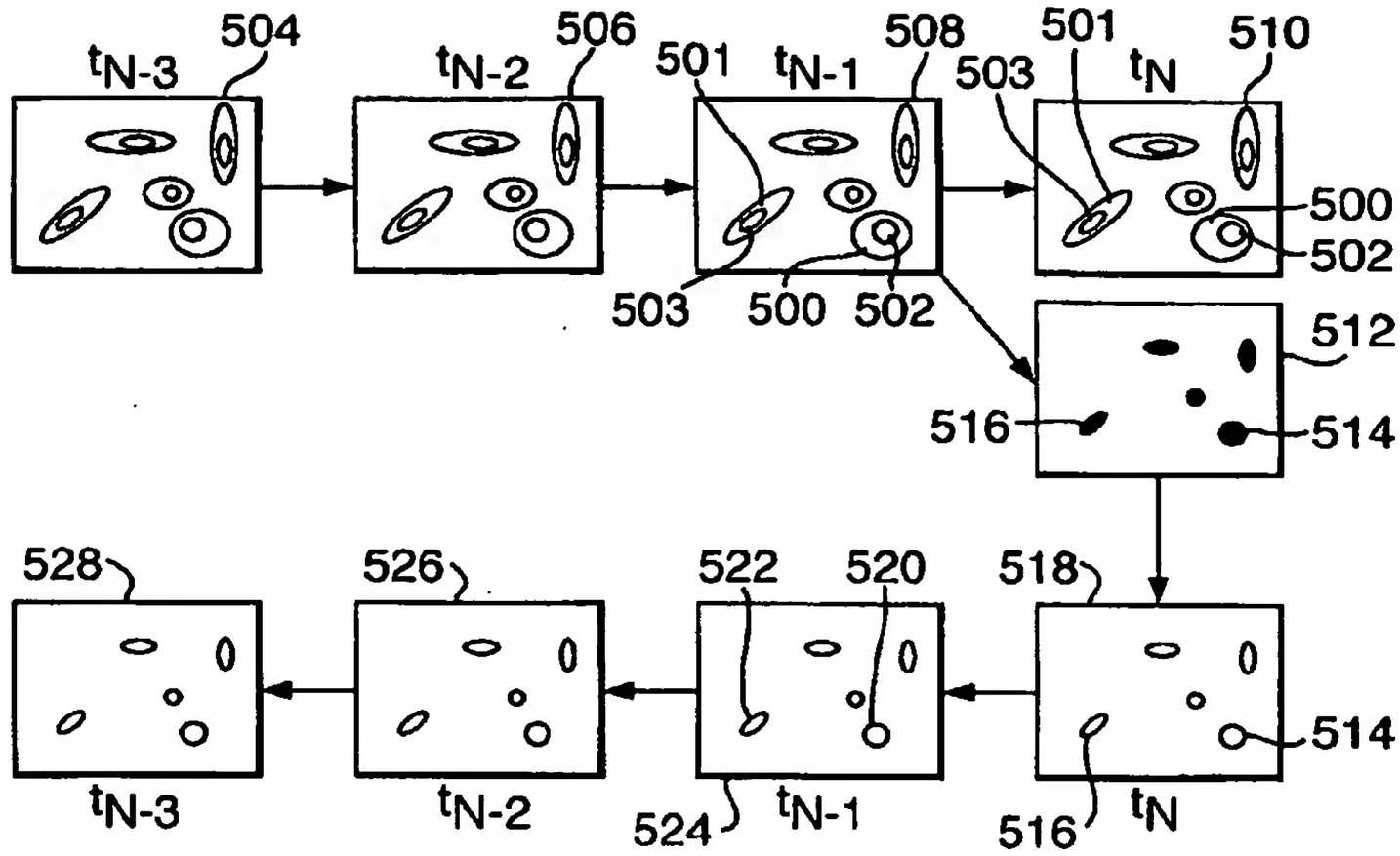

t_{N-3}
504
t_{N-2}
506
501
t_{N-1}
508
503
501
t_N
510
500
502
503
500
502
512
516
514
528
526
522
520
518
514
t_{N-3}
t_{N-2}
524
t_{N-1}
516
t_N

Fig.8.

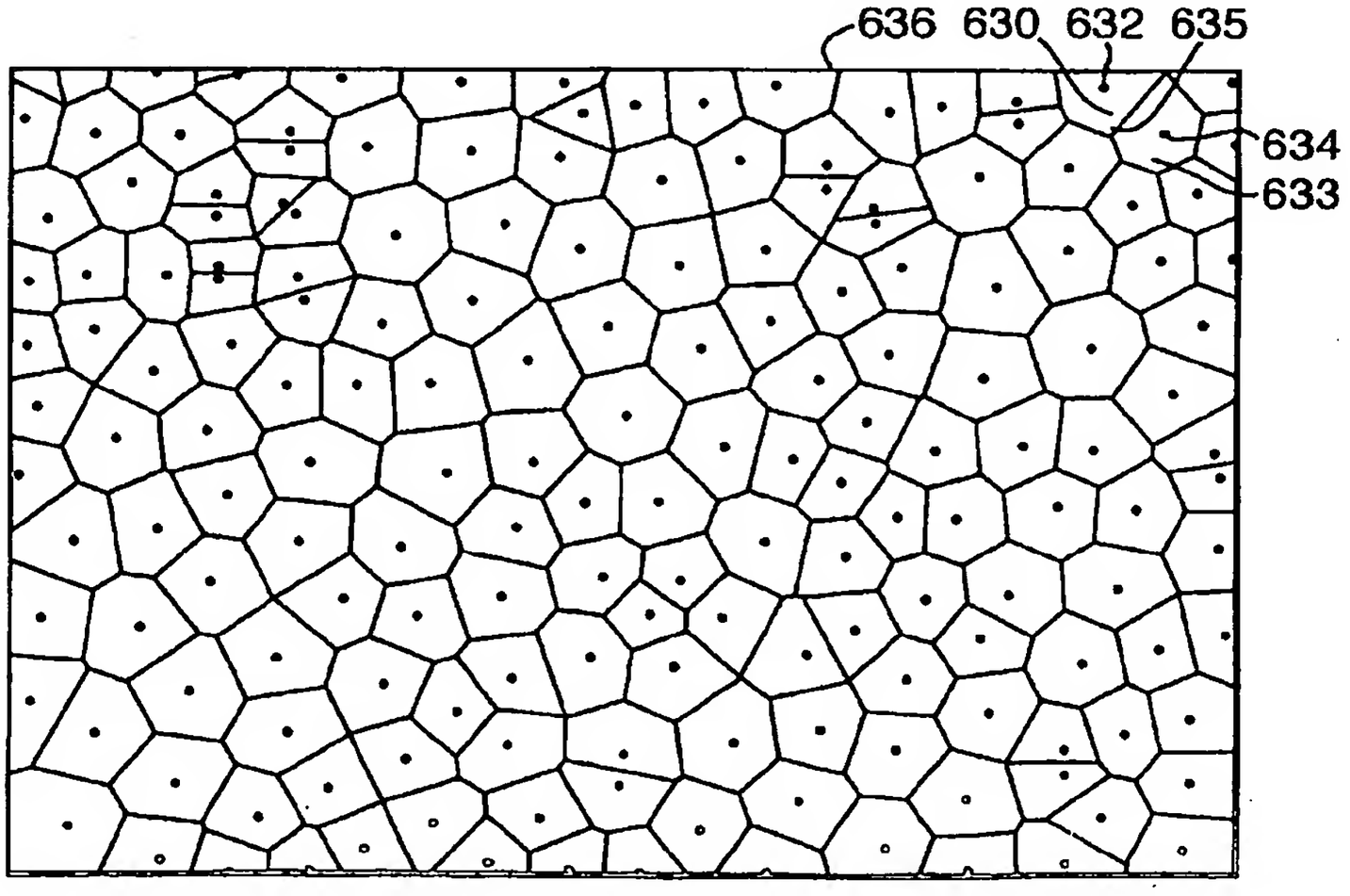

636
630
632
635
634
633

Fig.9.

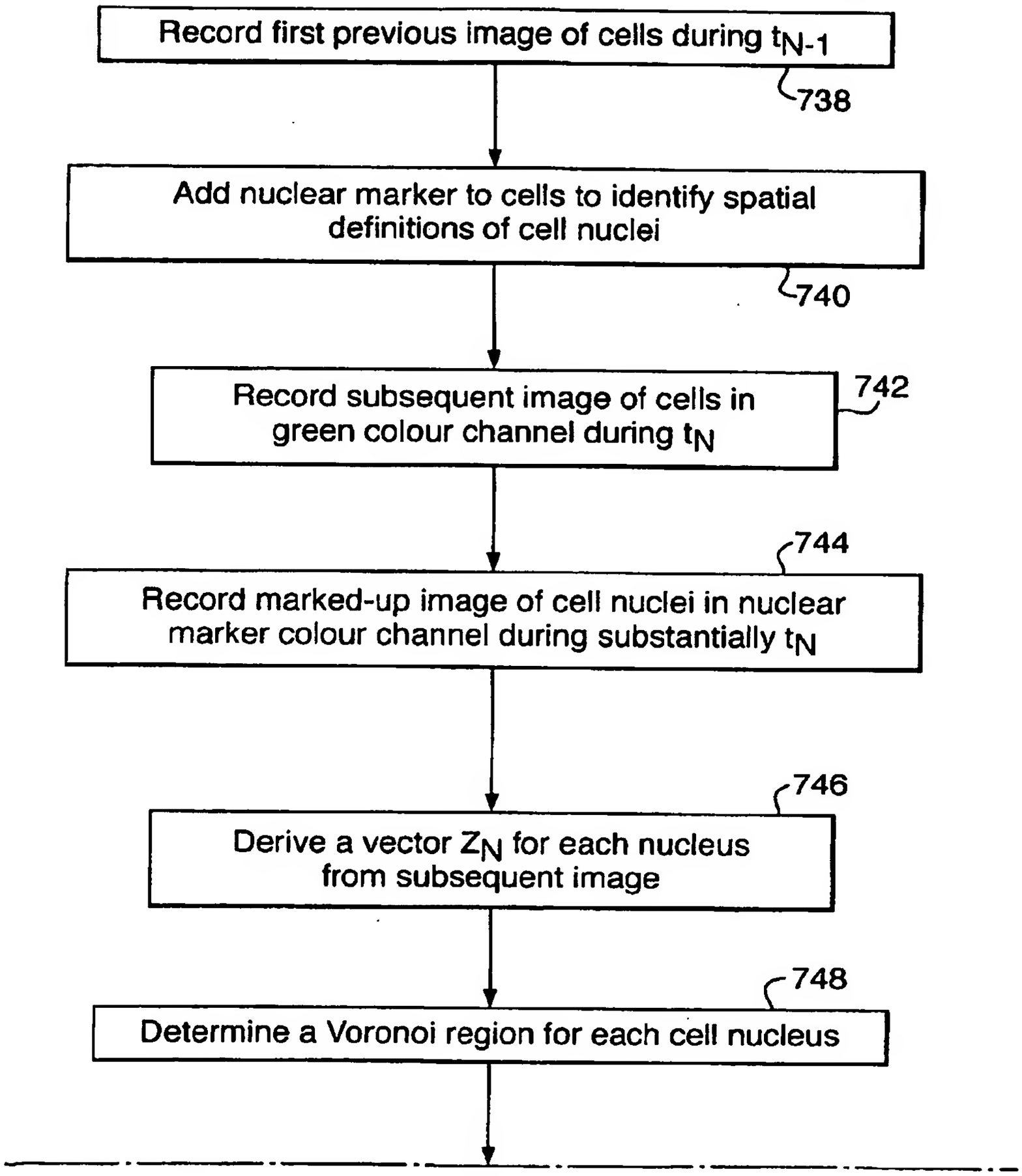

Record first previous image of cells during t_{N-1}
738
Add nuclear marker to cells to identify spatial definitions of cell nuclei
740
Record subsequent image of cells in green colour channel during t_N
742
Record marked-up image of cell nuclei in nuclear marker colour channel during substantially t_N
744
Derive a vector Z_N for each nucleus from subsequent image
746
Determine a Voronoi region for each cell nucleus
748

Fig.9 (Cont).

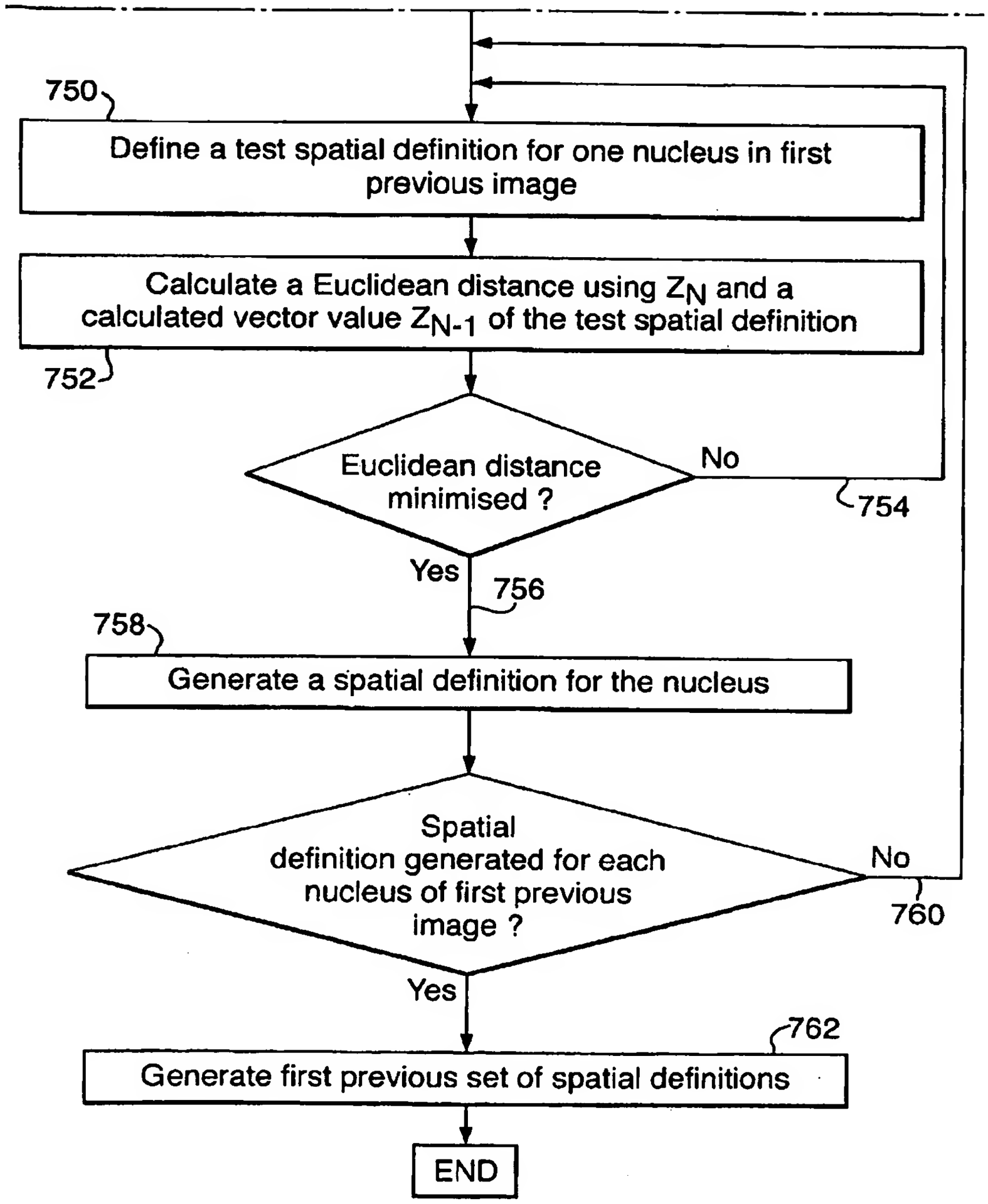

750
Define a test spatial definition for one nucleus in first previous image
Calculate a Euclidean distance using Z_N and a calculated vector value Z_{N-1} of the test spatial definition
752
Euclidean distance minimised ?
No
754
Yes
756
758
Generate a spatial definition for the nucleus
Spatial definition generated for each nucleus of first previous image ?
No
760
Yes
762
Generate first previous set of spatial definitions
END

Fig.10.

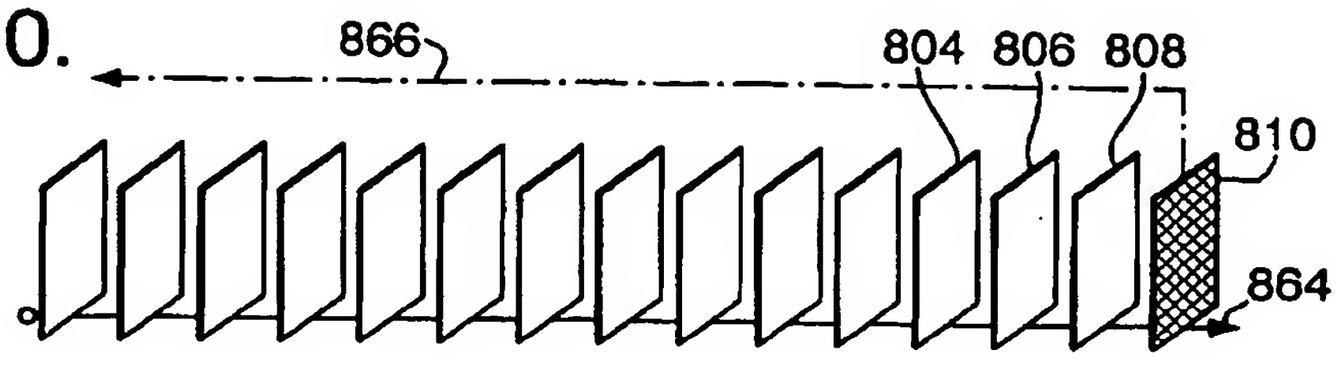


Fig.11.

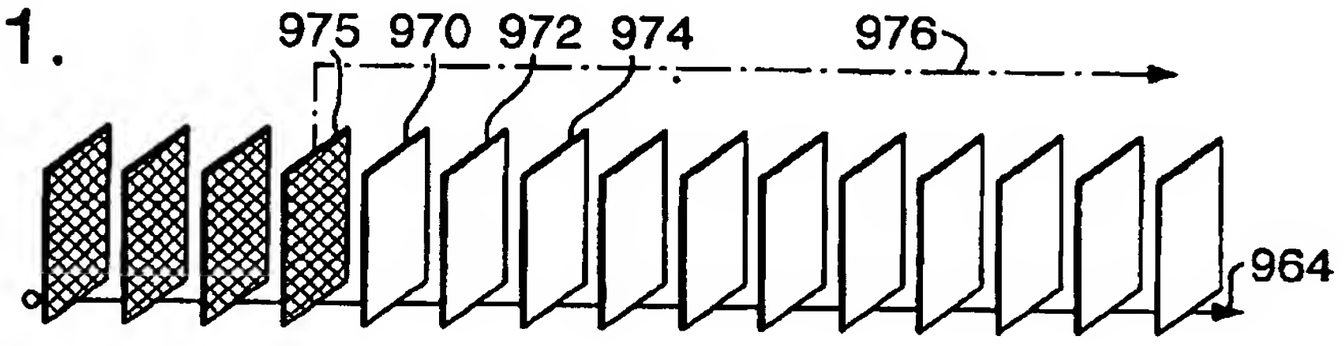


Fig.12.

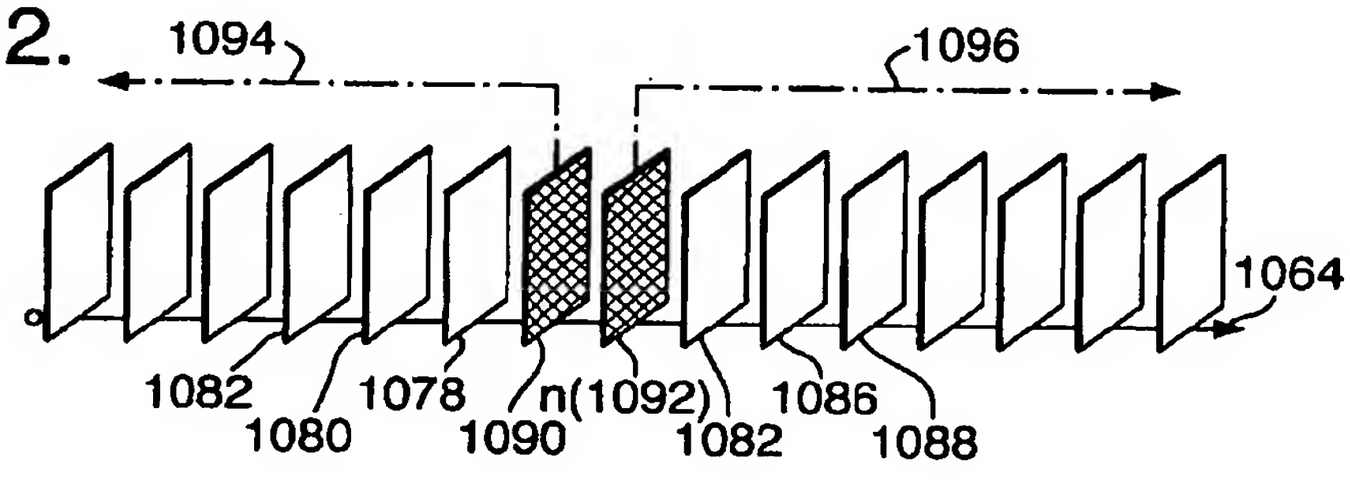
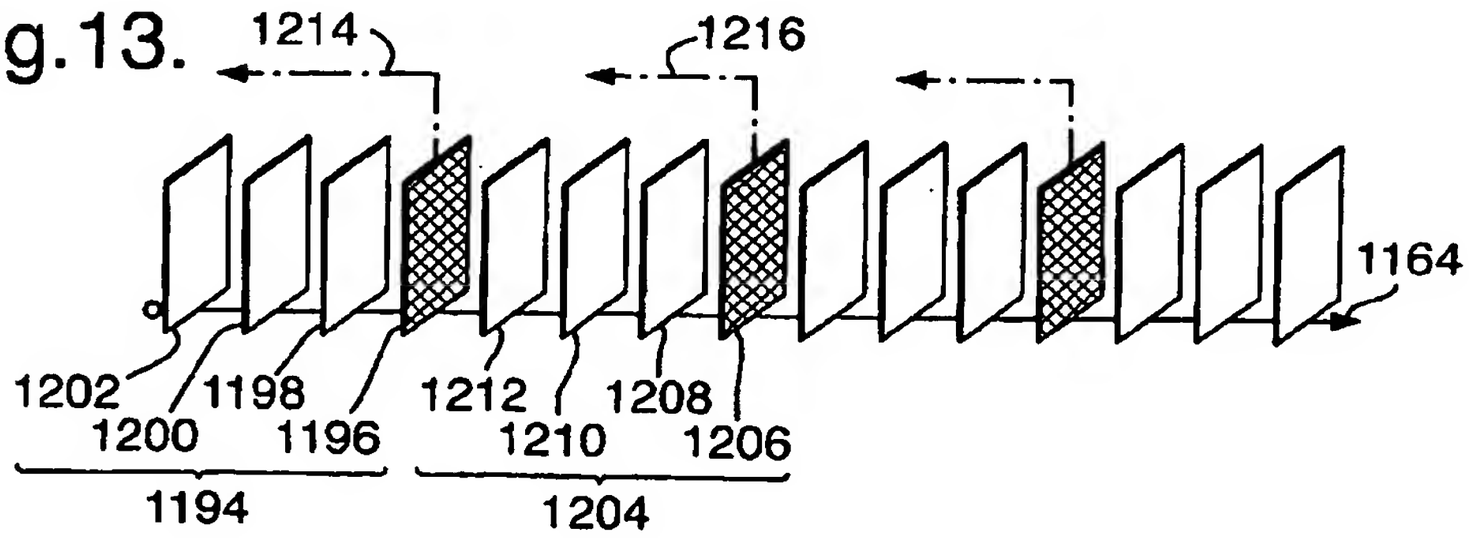



Fig.13.